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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--|-------------|----------------------|---------------------|------------------|
| 09/680,345 | 10/05/2000 | David W. Baarnan | 3086/1230 (BH 2068) | 7831 |
| 27879 | 7590 | 10/20/2003 | EXAMINER | |
| BRINKS HOFER GILSON & LIONE ONE INDIANA SQUARE, SUITE 1600 INDIANAPOLIS, IN 46204-2033 | | | CUEVAS, PEDRO J | |
| | | | ART UNIT | PAPER NUMBER |

2834

DATE MAILED: 10/20/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|------------------------------|------------------------|---------------------|--|
| Office Action Summary | Application No. | Applicant(s) | |
| | 09/680,345 | BAARMAN ET AL. | |
| | Examiner | Art Unit | |
| | Pedro J. Cuevas | 2834 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 July 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3-18,29,32-41,53-56,58 and 59 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3-18,29,32-41,53-56,58 and 59 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. In view of the Appeal Brief filed on July 7, 2003, PROSECUTION IS HEREBY REOPENED. New grounds of rejection are set forth below.

To avoid abandonment of the application, appellant must exercise one of the following two options:

(1) file a reply under 37 CFR 1.111 (if this Office action is non-final) or a reply under 37 CFR 1.113 (if this Office action is final); or,

(2) request reinstatement of the appeal.

If reinstatement of the appeal is requested, such request must be accompanied by a supplemental appeal brief, but no new amendments, affidavits (37 CFR 1.130, 1.131 or 1.132) or other evidence are permitted. See 37 CFR 1.193(b)(2).

Specification

2. The examiner accepts applicant's proposed title. A proper amendment changing the title must be timely submitted.
3. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 1, 3-6, 8-9, 11-12, 16, 18, 29, 32-35, 37, 41, 54-56, 58, and 59 rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 4,731,545 to Lerner et al. in view of U.S. Patent No. 6,431,821 to Feltenberger et al.

Lerner et al. clearly teaches the construction of a portable self-contained power conversion unit without flux concentrators, comprising:

a housing (10) that includes an inlet (12) supplied with a liquid from a liquid treatment system (column 2, lines 55-58), the fluid being drinking water, and an outlet (14), comprising a first section and a second section, the first section detachably coupled with the second section to facilitate assembly and maintenance;

a rotor (part of generator 16) which comprises a shaft (40) and a turbine rotor (36) including a helical ridge/vanes (37) rotatably positioned within the housing such that the rotor is rotated by a flow of fluid through the housing; and

a stator (part of generator 16) fixedly positioned within the housing to surround the rotor such that rotation of the rotor induces the production of electricity, which can be alternating or direct current by using either an AC or DC generator, or a rectified AC to DC generator (column 2, lines 37-45), wherein the rotor and stator are disposed in the second section and the turbine nozzle is disposed in the first section.

However, it fails to disclose a turbine nozzle fixedly coupled with the housing, wherein the turbine nozzle comprises a tip and a plurality of struts operable to direct the flow of water to the rotor at increased velocity to rotate the rotor, and is operable to increase the velocity of the fluid and direct the flow of fluid to achieve a predetermined angle of incidence of the fluid upon the rotor.

Feltenberger et al. teach the construction of a high torque impulse turbine having a turbine nozzle (2048) fixedly coupled with the housing, wherein the turbine nozzle comprises a tip and a plurality of struts operable to direct the flow of water to the rotor at increased velocity to rotate the rotor, and is operable to increase the velocity of the fluid and direct the flow of fluid to achieve a predetermined angle of incidence of the fluid upon the rotor (Figures 16-19) for the purpose of obtaining a wide variety of operating conditions and output characteristics from the water turbine.

It would have been obvious to one skilled in the art at the time the invention was made to use the turbine nozzle disclosed by Feltenberger et al. with the portable self-contained power conversion unit without flux concentrators disclosed by Lerner et al. for the purpose of obtaining a wide variety of operating conditions and output characteristics from the water turbine.

6. With regards to claims 29, 32-35, 37, 58, and 59 Lerner et al. in view of Feltenberger et al. clearly teaches the construction of a hydro-power generation system with all the previously discussed elements, which make the method of using it as claimed in the previously referred claims inherent to one with ordinary skill in the art.

7. Claims 7, 36 and 53 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 4,731,545 to Lerner et al. in view of U.S. Patent No. 6,431,821 to Feltenberger et al. as applied to claims 1, 3-6, 8-9, 11-12, 16, 18, 29, 32-35, 37, 41, 54-56, 58, and 59 above, further in view of U.S. Patent No. 4,740,711 to Sato et al.

Lerner et al. in view of Feltenberger et al. disclose the construction of a portable self-contained power conversion unit without flux concentrators as described above.

However, they fail to disclose a stator is fixedly positioned to surround the housing adjacent the rotor, plurality of exit guide vanes and a fin, and a method of supplying electricity comprising the act of channeling the fluid to the outlet with the plurality of exit guide vanes.

Sato et al. teach the construction of a pipeline built-in electric power generating set having a stator (13) fixedly positioned to surround the housing adjacent the rotor (12), a plurality of exit guide vanes (18) and a fin, for the purpose of enabling a flow of steam (or gas) from the pipes through the in-line generator.

It would have been obvious to one skilled in the art at the time the invention was made to use the stator/rotor arrangement, the exit guide vanes, and the fin disclosed by Sato et al. on the portable self-contained power conversion unit disclosed by Lerner et al. in view of Feltenberger et al. for the purpose of enabling a flow of steam (or gas) from the pipes through the in-line generator.

8. Claims 10, 13, and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 4,731,545 to Lerner et al. in view of U.S. Patent No. 6,431,821 to Feltenberger et al. as applied to claims 1, 3-6, 8-9, 11-12, 16, 18, 29, 32-35, 37, 41, 54-56, 58, and 59 above, further in view of U.S. Patent No. 3,913,399 to Sheeks.

Lerner et al. in view of Feltenberger et al. disclose the construction of a portable self-contained power conversion unit without flux concentrators as described above.

However, it fails to disclose a system, wherein the rotation of the rotor is operable to provide flow-based measurements of the fluid; and the rotor or stator comprises a permanent magnet.

Sheeks teaches the construction of a rate-of-flow meter, wherein the rotation of the rotor is operable to provide flow-based measurements of the fluid for the purpose of providing an

improved turbine type of rate-of-flow meter with attached generator, and the rotor or stator comprise a permanent magnet.

It would have been obvious to one skilled in the art at the time the invention was made to use the rate-of-flow meter, and the permanent magnet in either rotor or stator, disclosed by Sheeks on the hydro-power generation system disclosed by Lerner et al. in view of Feltenberger et al. for the purpose of providing an improved turbine type of rate-of-flow meter with attached generator.

9. Claims 14-15 and 38-40 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 4,731,545 to Lerner et al. in view of Ballast – General Information sheet, further in view of Electric Lamps (a brief history since Edison).

Lerner et al. disclose the claimed invention except for dynamically adjusting the voltage and current levels with a plurality of switchable coils in response to initial and continued energization of a common UV light source by the electricity generated, by using a plurality of taps.

Ballast – General Information sheet disclose the use and operation of UV light sources (discharge lamps) with control devices called electromagnetic ballasts, which dynamically adjust the voltage and current levels of input energy using a plurality of switchable coils and a plurality of taps (a makeshift terminal in an electric circuit used to establish an electric connection in a power line, as to divert current; as defined by The American Heritage® Dictionary of the English Language, Third Edition copyright © 1992 by Houghton Mifflin Company).

Electric Lamps (a brief history since Edison) disclose the use of UV light sources having ballasts prior to June 1995.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to operate a UV light source using electromagnetic ballasts having a plurality of switchable coils and a plurality of taps to adjust the voltage and current levels.

10. Claims 19-24, 28, 42-43, 45-47, 51, and 52 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 4,731,545 to Lerner et al. in view of U.S. Patent No. 6,431,821 to Feltenberger et al. as applied to claims 1, 3-6, 8-9, 11-12, 16, 18, 29, 32-35, 37, 41, 54-56, 58, and 59 above, further in view of U.S. Patent No. 4,246,753 to Redmond.

Lerner et al. in view of Feltenberger et al. clearly teaches the construction of a portable self-contained power conversion unit without flux concentrators as described above.

However, it fails to disclose a unit in which the fluid is operable to fall by gravity through the airspace to the outlet and be channeled out of the housing.

Redmond teaches the construction of an energy salvaging system having gravitationally conducting wet sewage for the purpose of allowing shaft (24) to do work, like generating electricity via electric generator (52) in amounts suitable for lighting.

It would have been obvious to one skilled in the art at the time the invention was made to use the energy salvaging system configuration disclosed by Redmond on the portable self-contained power conversion unit disclosed by Lerner et al. in view of Feltenberger et al. for the purpose of allowing a shaft to do work, like generating electricity via an electric generator in amounts suitable for lighting.

11. With regards to claims 20-24, and 28 Lerner et al. in view of Feltenberger et al. disclose a nozzle which is operable to change the velocity of fluid flowing therethrough to subsonic speed; a generator that generates alternating or direct current by using either an AC or DC generator, or

a rectified AC to DC generator (column 2, lines 37-45); and the impeller comprising a plurality of blades (37).

12. With regards to claims 42-43, 45-47, 51 and 52, Lerner et al. in view of Feltenberger et al., further in view of Redmond disclose the construction of a portable self-contained power conversion unit without flux concentrators, and with all the previously discussed elements, which make the method of using it as claimed in the previously referred claims inherent to one with ordinary skill in the art.

13. Claims 26-27, and 48-50 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 4,731,545 to Lerner et al. in view of U.S. Patent No. 6,431,821 to Feltenberger et al., further in view of U.S. Patent No. 4,246,753 to Redmond as applied to claims 19-24, 28, 42-43, 45-47, 51, and 52 above, and further in view of Ballast – General Information sheet in view of Electric Lamps (a brief history since Edison).

Lerner et al. in view of Redmond disclose the claimed invention except for the use of a plurality of taps and switchable coils, and adjusting the voltage and current levels with a plurality of switchable coils by using a plurality of taps.

Ballast – General Information sheet disclose the use and operation of UV light sources (discharge lamps) with control devices called electromagnetic ballasts, which dynamically adjust the voltage and current levels of input energy using a plurality of switchable coils and a plurality of taps (a makeshift terminal in an electric circuit used to establish an electric connection in a power line, as to divert current; as defined by The American Heritage® Dictionary of the English Language, Third Edition copyright © 1992 by Houghton Mifflin Company).

Electric Lamps (a brief history since Edison) disclose the use of UV light sources having ballasts prior to June 1995.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to operate a UV light source using electromagnetic ballasts having a plurality of switchable coils and a plurality of taps to adjust the voltage and current levels.

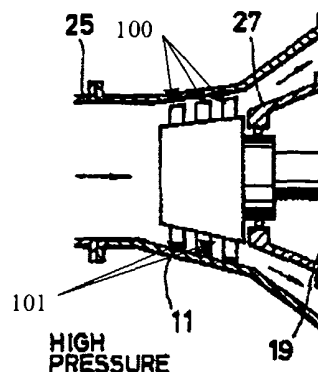
14. Claims 25 and 57 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 4,731,545 to Lerner et al. in view of U.S. Patent No. 6,431,821 to Feltenberger et al. as applied to claims 1, 3-6, 8-9, 11-12, 16, 18, 29, 32-35, 37, 41, 54-56, 58, and 59 above, further in view of U.S. Patent No. 4,246,753 to Redmond as applied to claims 19-24, 28, 42-43, 45-47, 51, and 52 above, further in view of us 4,740,711 to Sato et al.

Lerner et al. in view of Feltenberger et al., further in view of Redmond disclose the claimed invention except for each of the blades comprise:

at least two paddles, and

a slot operable to allow energy in the stream of fluid to pass to another of the blades as the impeller rotates.

Sato et al. teach the construction of a pipeline built-in electric power generating set having multiple paddles (100) forming blades with slots (101), for the purpose of enabling a flow of steam (or gas) from the pipes through the in-line generator.



It would have been obvious to one skilled in the art at the time the invention was made to use the multiple paddles and slots to form a blade as disclosed by Sato et al. on the portable self-contained power conversion unit having parabolic shaped blades disclosed by Lerner et al. for the purpose of enabling a flow of steam (or gas) from the pipes through the in-line generator.

Conclusion

15. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Sec PTO-892.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Pedro J. Cuevas whose telephone number is (703) 308-4904. The examiner can normally be reached on M-F from 8:30 - 6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nestor R. Ramirez can be reached on (703) 308-1371. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305-3432 for regular communications and (703) 305-3432 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

Pedro J. Cuevas
October 10, 2003



Nicholas Ponomarenko
Primary Examiner
Technology Center 2800